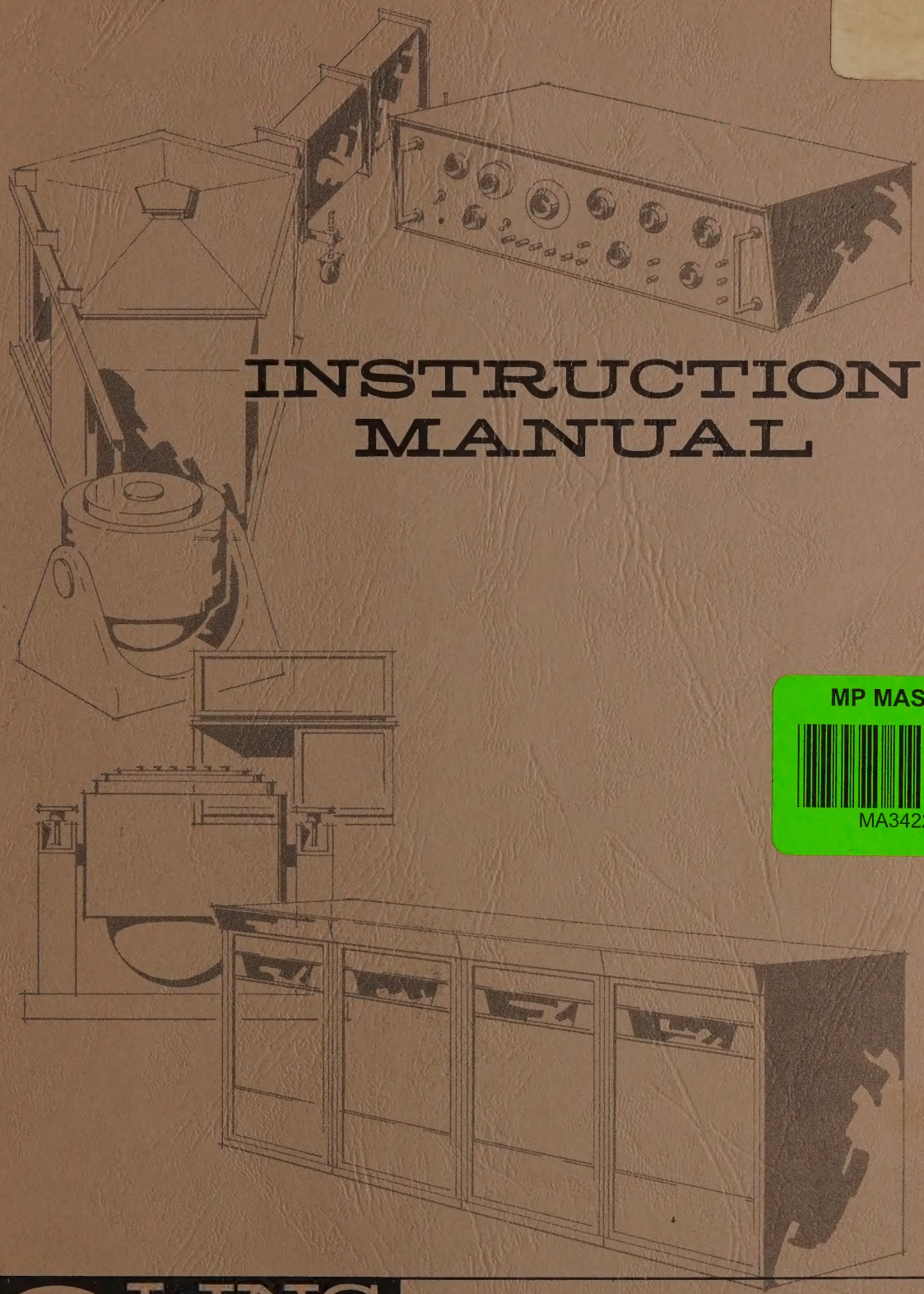
PSE 330



INSTRUCTION MANUAL

MP MASTER
MA34227

LING Electronics
A DIVISION OF LTV LING ALTEC, Inc.

MODEL

FIELD POWER SUPPLY
(THREE-PHASE)

IN ALL CORRESPONDENCE WITH THE FACTORY BE SURE TO INCLUDE THE FOLLOWING INFORMATION:

EQUIPMENT MODEL NUMBER

SERIAL NO. 42

LING NO. 44107

LING Electronics

A DIVISION OF LTV LING ALTEC, Inc.
1515 S. MANCHESTER AVENUE, ANAHEIM, CALIFORNIA 92803 (714)774-2000

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ADDENDUM
FIELD POWER SUPPLY
(THREE PHASE)

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D: The following to TABLE 1. FIELD POWER SUPPLY REFERENCE DATA

N	P.O.N.	SUPPLY	SCHEMATIC NUMBER	INPUT (kva)	NOMINAL FIELD VOLTAGE (volts)	NOMINAL FIELD CURRENT	DEGAUSS CURRENT	COOLIN AGEN
p		PS-390R	35106	8.5	190	40	Adjustable 0.6-1.5	AIR
12		PS-390RS	35877	9	190	40	Adjustable 0.6-1.5	AIR
p		PS-286RS	24228	2.9	95	18	NONE	AIR
	43653	PS-340	44993	105	240	400	1.5	AIR
	43667	PS-177A	35896	11	250	40	1.5	AIR
p		PSE-340	24694	105	240	400	1.5	AIR
	43446	PS-300-5	35490	2.5	115	47	NONE	AIR
39	43812	PS-300/ 335	44261-38 39	25/64	90/145	250/ 400	1.1/2.0	AIR
C.	43600	PS-340	5914-12	105	240	400	1.5	AIR
C.	43668	PS-340-1	50313-12	105	240	400	1.5	AIR
C.	43555	PS-A174	60340	3.4	125	25	1.5	AIR
C.	43716	PSE-390	36002	8.5	190	40	Adjustable 0.6-1.5	AIR

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ANGE:

p		PS-EPT-200R-1	24727	2.75	4.6	300	----	AIR
p		PS-EPT-200R-2	24726	4.25/ 2.75	9.2/ 4.6	300	----	AIR

Effectivity: All
Release: 38-5R
Page: 1 of 1

FIELD POWER SUPPLY INSTRUCTION MANUAL

1. INTRODUCTION

The field power supply instruction manual contains a general description of the standard Ling Electronics three-phase field power supply models. The specifications and appropriate schematic number of each standard field power supply are included with this instruction manual.

2. GENERAL DESCRIPTION (Refer to the applicable field power supply schematic.)

a. The basic field power supply is a three-phase, full-wave semiconductor, bridge rectifier designed to energize the field coils located in electrodynamic or electro-pneumatic transducers. Some field power supplies provide extra current output to energize a degaussing coil located on the electrodynamic transducer.

b. The three-phase, nominal 480-volt ac, 50/60-hertz power input is applied to a step-down transformer. In most field power supplies, the primary of the step-down transformer has taps to match input voltages from 420 through 500 volts ac to the nominal input voltage required by the field power supply. When taps are provided, the input lines to the step-down transformer must be changed to the taps that will provide the closest match for the input voltage. The three-phase input power is rectified by the full-wave bridge circuit. The output current of the bridge rectifier is filtered by capacitors. A resistor, in series with the capacitor, limits surge currents. When power is removed, a resistor across the output provides a discharge path for the filter capacitor. In some models, a potentiometer, labeled DEGAUSS, permits adjustment of the current level to the degaussing coil. Manual or motor-driven variacs are supplied on some models to vary the field power supply output current level.

c. Power control is normally provided by a contactor-circuit breaker arrangement in the field power supplies. For field power supplies mounted as an integral component of the power amplifier, the contactor and circuit overload components are part of the power control circuit of the power amplifier. For some chassis-mounted field power supplies, the circuit breaker is mounted on the chassis and no contactor is used. When the field power supply is mounted in a separate cabinet, the contactor and circuit overload components are mounted in the field power supply cabinet. Connections are provided for

the system power control circuits for sequential application of power to the field power supply. Interlock circuits are provided for the system to disable the power circuits when the field power supply cabinet door is opened.

TABLE 1. FIELD POWER SUPPLY REFERENCE DATA

SUPPLY	SCHEMATIC NUMBER	INPUT (kva)	NOMINAL FIELD VOLTAGE (volts)	NOMINAL FIELD CURRENT (amps)	DEGAUSS CURRENT (amps)	COOLING AGENT
PS-EPT 200R-1	33982	2.75	4.6	300	----	WATER
PS-EPT 200R-2	34133	4.25/ 2.75	9.2 4.6	300	----	WATER
PS-L-200	*	36	275	120	----	AIR
PSE-L-200	41969	36	275	120	----	AIR
PS-249	*	48	215	200	4.0	AIR
PSE-249	43502	48	215	200	4.0	AIR
PS-275-1, -2	*	25	220	105	----	AIR
PS-275-3	44261	25	220	105	----	AIR
PSE-275	43808	25	220	105	----	AIR
PS-290-1	32448	3.4	120	25	0.5	AIR
PS-290R	34806	3.4	120	25	0.5	AIR
PS-300-1, -2, -3	*	25	90	250	1.1	AIR
PS-300-4	44261	25	90	250	1.1	AIR
PSE-300	41859	25	90	250	1.1	AIR
PS-310A	43781	25	90	250	1.1	AIR
PS-330-1	*	28	60	425	1.1	AIR
PSE-330	43174	28	60	425	1.1	AIR
PS-335-1	*	64	145	400	2.0	AIR
PS-335-2	44261	64	145	400	2.0	WATER
PSE-335	43897	64	145	400	2.0	AIR
PS-350	*	42	155	250	----	AIR
PSE-350	44823	42	155	250	----	AIR

*Indicates schematic is part of schematic of amplifier in which supply is installed.

TABLE 1. FIELD POWER SUPPLY REFERENCE DATA (cont)

SUPPLY	SCHEMATIC NUMBER	INPUT (kva)	NOMINAL FIELD VOLTAGE (volts)	NOMINAL FIELD CURRENT (amps)	DEGAUSS CURRENT (amps)	COOLING AGENT
PS-286R	35280	2.2	110	18	-	AIR
PSE-290	32279	3.4	120	25	0.5	AIR
PS-330-2	35209	28	60	425	1.1	AIR
PS-335-3	35209	64	145	400	2.0	WATER
PS-335	45764	64	145	400	2.0	AIR
PSE-EPT-200-12	46034	19.5	Variable 0-62	300	-	AIR
PSE-EPT-200-8	46030	14	44	300	-	AIR
PS-300-5	35209	25	90	250	1.1	AIR

d. The field supplies covered in this instruction manual are cooled either by air or water, depending upon their application (table 1). In systems where space permits, and the heat dissipated by the power supply does not affect surrounding components, air-cooling is used. In systems where space does not permit the installation of air-cooling components, and where the dissipated heat would be undesirable, water-cooling is used. As in any application where distilled water is constantly in contact with metal, some degree of electrolysis and corrosion will take place. To prevent the costly replacement of components which are cooled by this water, sacrificial brass fittings have been installed at some point in the plumbing system to protect these components. Figures 1A and 1B illustrate the two components which in one application or another are the water-cooled components of the field power supply.

In figure 1A, the step-down transformer is the cooled component, and the fittings are located in the distribution blocks (inlet and outlet). The four fittings in each block must be periodically inspected, and replaced, if necessary, to prevent the deteriorating action from affecting other components in the supply. The water-cooled component in figure 1B is the rectifier stack of the supply. The fittings (two on each mounting plate) are installed in the inlet and outlet adapters on the rectifier stack. These fittings must be inspected, and replaced in the same manner as those of the transformer application.

NOTE

The distilled water used in the field supply is normally supplied from its associated shaker cooling unit. Refer to the amplifier manual for cooling system maintenance.

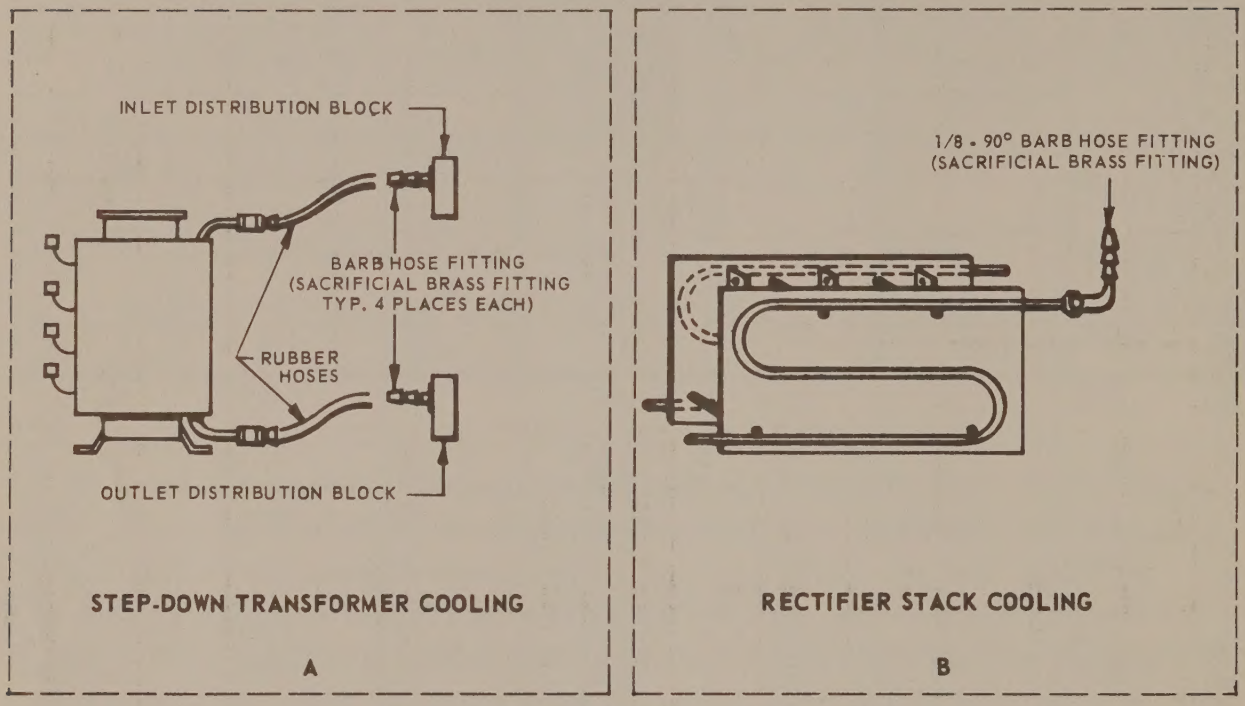

Fig. 1, Field Power Supply Water-cooled Components

3. FIELD POWER SUPPLY MOUNTING

The field power supply may be housed as part of a system cabinet, separately mounted on a chassis, or mounted in a separate cabinet. Reference designations used to identify the type of mounting are listed below. Dash numbers identify modifications to the original mounting design.

a. PS-000-0 indicates field power supply is mounted as an integral part of the system cabinet.

b. PS-000R-0 indicates field power supply is mounted on a separate chassis.

c. PSE-000 indicates field power supply is mounted in a separate chassis.

ENGINEERING PARTS LIST

DATE 5-21-65 PAGE 1 MANUAL
REV. C CONT'D ON 2 REQUISITION NO.

MODEL OR ASSY.	SERIAL NO.	SHOP ORDER	PON	QTY.	ACCOUNT NO.	M-DAY	DAT
T82-330							

REV.	ITEM NO.	*R. S.	SYMBOL DESIG.	STOCK/DWG NUMBER	DESCRIPTION	MFG CODE	MANUFACTURER PART NUMBER	QTY. ASSY.	QTY. UNIT	CODE	KARDEX	PURCH ORD
				43174	Schematic			-	-			
				5930	Modification and Layout			-	-			
A				42501	Control Panel (Silkscreen per 42502)			1	1			
B				42502	Silkscreen, Control Panel			- /	- /			
				31035	Panel, Inside Upper Left			1	1			
				32201	Panel, Inside Lower Left			1	1			
				21698	Bracket Resistor Mounting			3	3			
				21699	Bracket Contactor Mounting			2	2			
D				32131	Floor Plate			1	1			
E												
F				82470-0014	Ground Lug	LSCO	XT-500	1	1			
G			E1	85102-2424	Ground Bolt			1	1			

*R.S. - RECOMMENDED AS CUSTOMER SPARES None

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ENGINEERING PARTS LIST

DATE 4-16-65 PAGE 2 MANUAL

REV. F CONT'D ON 3 REQUISITION NO.

MODEL OR ASSY.	SERIAL NO.	SHOP ORDER	PON	QTY.	ACCOUNT NO.	M-DAY	DATE
PSE-330							

SEQ.	ITEM	*R.S.	SYMBOL DESIG.	STOCK/DWG NUMBER	DESCRIPTION	MFG CODE	MANUFACTURER PART NUMBER	QTY. ASSY.	QTY. UNIT	CODE	KARDEX	PURCHASE ORDER
				33367	Cabinet Assembly			1	1			
			B1	80153-0003	Blower	DA	2C610	1	1			
				1025	Clip			6	6			
				21617	Nameplate			1	1			
				82460-0034	Spacer, Blower Mounting	AMATOM ELEC	8795-A-1032-17	4	4			
				82180-0001	Standoff			3	3			

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DATE 4-[illegible] PAGE 3 MANUAL

REV. 0 CONT'D ON 4 REQUISITION NO.

MODEL OR ASSY.	SERIAL NO.	SHOP ORDER	PON	QTY.	ACCOUNT NO.	M-DAY	DATE
PSE 330							

REV.	ITEM NO.	*R.S.	SYMBOL DESIG.	STOCK/DWG NUMBER	DESCRIPTION	MFG CODE	MANUFACTURER PART NUMBER	QTY. ASSY.	QTY. UNIT	CODE	KARDEX	PURCHASE ORDER
				82012-0019	Bracket, Capacitor Mtg.	SA	Type 15	1	1			
				82287-0003	Door Switch Cover	MS	5PA3	1	1			
				80143-0011	Fuse Clip	IL	C15	6	6			
				80115-0001	Knob	GR	KNS-12	1	1			
				82180-0004	Standoff			6	6			
			C1	82049-0053	Capacitor 350 μf 350V	SA	539-2748-01	1	1			
			CR1	TS 10797	Rectifier Stack			1	1			
			F1	82145-0038	Fuse, Slo-Blo 1 Amp 3AG	LI	313001	1	1			
			XF1	80143-0009	Fuse Post 100-125V	LI	344125	1	1			
			K1	82291-0018	Contactor	CL	77A32-16	1	1			
			M1	82361-0011	Meter Field use w/ext. Shunt Panel Alum 500 ADC 50 MV	GE	DO 91 514 x 26	1	1			
			M2	82360-0013	Meter Degauss 0-1.5 ADC	GE	DO 91 512 x 60	1	1			

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DATE 5-21-65 PAGE 1 MANUAL
REV. C CONT'D ON 5 REQUISITION NO.

MODEL OR ASSY.	SERIAL NO.	SHOP ORDER	PON	QTY.	ACCOUNT NO.	M-DAY	DATE
PSR 300							

SEV.	ITEM	R.S.	SYMBOL DESIG.	STOCK/DWG NUMBER	DESCRIPTION	MFG CODE	MANUFACTURER PART NUMBER	QTY. ASSY.	QTY. UNIT	CODE	KARDEX	PURCHASE ORDER
			R1	82211-T500K	Rheostat 50 ohm 50W Dual	O	0601-0318	1	1			
			R2	82244-0501J	Resistor 500 ohm 25W	O	0202	1	1			
			R3,R4, R5	82242-0P15K	Resistor Ribflex 0.15 ohm 375W	WL	WL-D-Core	3	3			
			R6	82300-0009	Shunt 500 ADC 50 MV	WE	282640	1	1			
			R7 A & B	82244-0020J	Resistor 2 ohm 25W	O	0200K	2	2			
			K2	82294-0021	Relay, Time Delay Siliconetic 15 Sec.	HE	CJ1-577AXX	1	1			
			S1	82235-0004	Door Switch	MS	BZ7RQ1T	1	1			
			S2	82085-0009	Breaker	HE	3X1163S-40-460-C-3	1	1			

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REV. C CONT'D ON - REQUISITION NO.

MODEL OR ASSY.	SERIAL NO.	SHOP ORDER	PON	QTY.	ACCOUNT NO.	M-DAY	DATE
PSE 330							

REV.	ITEM	*R.S.	SYMBOL DESIG.	STOCK/DWG NUMBER	DESCRIPTION	MFG CODE	MANUFACTURER PART NUMBER	QTY. ASSY.	QTY. UNIT	CODE	KARDEX	PURCHASE ORDER
			T1	PT-615	Transformer			1	1			
			TB1	80112-0094	Output Block	AB	1492-400YF	2	2			
			TB2	80112-0022	Barrier Strip	CJ	10-142	1	1			
			TB2	80113-0001	Marker Strip	CJ	MSX-10-142	1	1			
			TB3	80112-0005	Barrier Strip	CJ	2-142	1	1			
			TB3	80113-0002	Marker Strip	CJ	MSX-2-142	1	1			

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